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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,521	11/10/2003	Bart Balm	P2001,0328	7861
24131	7590	12/10/2004	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			KINKEAD, ARNOLD M	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/705,521

Applicant(s)

BALM ET AL.

Examiner

Arnold M Kinhead

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to..
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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*Claim Objections*

Claims 3-7 are objected to because of the following informalities: In claim 3, lines 1-2, claim 4, lines 1-2, claim 6, line 4, and claim 7, lines 1-2, " said capacitance" should read—said frequency determining capacitance—.

See claim 5, lines 1-2, " said capacitor" should read—said plurality of discrete capacitor elements—.

Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1,2,3,4,5,6,7,and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lysobey and further in view of Davis(WO 89/06456) all of record.

The reference by Lysobey discloses a PLL with open loop mode, i.e., unlocked, see figure 3, col. 4, line47-col. 5. The loop comprises a VCO with transistor(31) and has a first tuning input(node between varactor diodes(36,37). A signal output(RF out is shown). The VCO has other frequency determining capacitance controlled at a second tuning input(see nodes between VC1,VC2 variable capacitance diodes). A frequency divider (30) with adjustable division ratio(dependent on FREQ. SEL.(32, bus input line) is shown for channel adjust. The input of the divider is connected to the VCO output. The output of the divider is a frequency divided output signal(RF/N) coupled to the first tuning input. A control input(from 32) is shown for stipulating the division ratio. Note that the DAC(33) is connected to the stipulation signal and second tuning input for driving the capacitance with a word(a number of bits( via the bus (32)).

The reference by Lysobey does not show the stipulation unit, nor does it show the art recognized equivalent, plurality of discrete(binary weighted) capacitive elements, which allow for the frequency tuning that the varactor diodes allow for to ultimately reduce the frequency drifting during channel changes.

The reference by Davis, see figure 2, and claim 5, is relied upon to show the use of a channel stipulation means(22) that would allow for the channel info to be transmitted on the bus (32) to set the channel as desired. Note connection to divider(20, see figure 1) and discrete, binary weighted controlled caps(30,see figure 2). The discrete caps allowing for an equivalent function as that shown by the Lysobey varactor diodes, in that they change the tuning capacitance as the channel selection takes place, during the

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PLL unlocked mode, open loop at the time of divider ratio being controlled, so as to allow for the reduction in frequency drifting that is inherent.

In light of the above it would have been obvious for one of ordinary skill in the art to have recognized that the bus info of Lysobey is received from a channel "stipulation" unit as highlighted by Davis. The use of binary weighted caps for frequency tuning is functionally equivalent to the varactor diodes(an analog approach) for frequency tuning and both are conventional in the art. The fact that both references allow for tuning the VCO directly from the stipulation as well as the divider allows for the reduction in frequency drifting and enhances loop stability when the divider is being controlled(open loop, loop element is externally controlled).

#### *Response to Arguments*

4. Applicant's arguments filed 10-01-04 have been fully considered but they are not persuasive. The examiner has considered applicants remarks, especially the main issue, with respect to the "memory effect of the loop filter" ; however, it is to be noted that there is a loop filter(17) in the Lysobey reference, and in fact, see col. 3, line 30-35, it is noted that the PLL response(stability) is dependent on the loop filter principally...That is, regardless of whether the reference has a modulation input, the loop filter is of concern if there is a change by way of the frequency selection input to the divider(30).

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*Conclusion*

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinhead whose telephone number is 571-272-1763. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnold M Kinkead

Primary Examiner

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Arnold Kinkead

Dec. 06, 2004